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Attachment No. 1 Performance Work Statement (PWS)

Office of Water Information Technology Support Services

United States Environmental Protection Agency (EPA)

Contents

1. Introduction and Background

The United States Environmental Protection Agency's (the Agency) Office of Water (OW) seeks Information Technology support for a wide array of software and enterprise architecture projects.

The Environmental Protection Agency's Office of Water (OW) manages a diverse portfolio of over 40 Information Technology projects. OW's Information Technology Advisory Committee (ITAC), comprised of Deputy Office Directors and representatives from each of the four OW Program Offices, oversees, approves, and advises on existing and future OW IT investments; formulates policy and strategy to optimize IT investments; and promotes compliance of OW IT investments with Federal and Agency requirements.

The Project Management Office (PMO), within OW's Immediate Office, provides IT Project Management services, IT Consulting, Enterprise Architecture, IT Policy support, and strategic planning services for OW but also work across other parts of the Agency, including the Office of Mission Support (OMS) as well as other EPA Offices.

The PMO manages several projects in OW's IT Portfolio while the remainder are managed and funded by OW Program Offices. The PMO-managed projects include software systems whose goals are to integrate information across all OW Program Offices or to support a regulatory requirement.

Since 2008, the PMO has also promoted the implementation of sound IT Project Management Practices based on the Project Management Institute's (PMI) Global Standard Methodology and other approaches. In addition, the PMO has planned and executed training programs for OW IT Project Managers.

The Office of Water recognizes that fundamental changes are reshaping government IT development and management environments. These include the use of SaaS, PaaS and IaaS to support enterprise functions; development using Low-code/No-Code technologies; the use of RPA to streamline business processes; human-centered design; agile development methodologies; Continuous Integrations and Continuous Development (CI/CD); and a proliferation of systems utilizing service-oriented architectures, micro services and application programming interfaces (APIs); and substantial economies for data storage and management via Cloud hosting.

In addition, the PMO's work in developing the Office of Water's water segment enterprise architecture has underscored the need to integrate or improve OW IT system designs to support OW's strategic, programmatic, and regulatory mission.

The United States Environmental Protection Agency's (the Agency) Office of Water seeks Information Technology support for: software design, development and operations and maintenance; enterprise and systems architecture; help desk support; subject matter expertise; project management software support and maintenance; and any ancillary support related to IT

service delivery (e.g., training, strategic consulting, regulatory and business process analysis). Other than the Project Management Environment, the software systems are mission support systems that implement policy, regulations, or other feature of the Clean Water Act (CWA); the Safe Drinking Water Act (SDWA) and other environmental requirements, regulations, and laws.

2. Objectives

The objectives of this Task Order are as follows:

1. Design, develop, test, and deploy cost-effective and technically sound software applications using the most appropriate suite of technologies
2. Operate and maintain software applications and support a wide range of data processing (loading, analysis, quality assurance, etc.) within EPA's hosting environment or a Federally approved Cloud environment
3. Use critical subject matter expertise to ensure software system requirements, design, and testing are responsive to end-users and policy, regulatory and legal requirements of the CWA, SDWA, and other environmental policies or laws
4. Ensure that Federal and Agency IT/IM Policy and security requirements are implemented in IT solutions and software, including Section 508 requirements
5. Adopt the use of development technologies that promotes rapid application development, improves useability, and promotes reuse

3. Scope

The scope of this effort includes all services necessary to meet the objectives of the Task Order, which include:

- Program and Project Management
- Full Software Application Life Cycle Support to include:
  - Application feasibility; options and business analysis. This includes the minimization of custom software and design.
  - Enterprise Architecture and IT Policy Support
  - Design (including requirements collection and management)
  - Development (including graphic design and content for web systems) using the best development methodology (e.g., waterfall, agile, iterative, or some combination)
  - Integration
  - Quality Assurance and Testing
  - Security
  - Continuous Integration/Continuous Development
- Software Operations and Maintenance to include:
  - Loading, and refreshing data relevant to each system
  - Monitoring

- Application user support and help desk management
- Minor enhancements

The contractor must provide management and technical services within the scope of this task to support the projects listed below. Transition activities will begin immediately upon Task Order award (refer to Appendix A1 and A2 for background information, functional and software for OW IT systems listed below):

Office of Water Systems in Scope:

1. Assessment, TMDL Tracking, and Implementation System (ATTAINS)/ Water Quality Framework (WQF)
2. Water Quality Exchange
3. How's My Waterway
4. Watershed Assessment, Tracking, and Environmental Results (WATERS) System
5. DARTER
6. eBeaches
7. Marine Sanitary Survey Application and National Listing of Fish Advisories
8. OW and Agency Web Content Management System
9. FedTalent
10. WIFIA Vault
11. OWOW Finance Central
12. NHDPlus
13. Response on the Go Mobile App
14. Software Development Environment
15. Optional Systems

4. Requirements and Tasks

To support the Agency mission, projects and system requirements, the Government requires sophisticated information technology systems and subject matter expert knowledge and experience. The technical expertise and task requirements are described below and in Appendix A1.

To successfully administer this Performance Work Statement, the contractor must fill key positions with highly experienced staff. Personnel assigned to key positions, as well as other proposed staff, must demonstrate experience in required skill sets.

The Contractor must ensure a stable workforce during the performance of this contract. The Contractor must designate key personnel including a Program Manager, a Technical Application Architect, and a Geospatial Analysis/Geographic Information System (GIS) Expert.

4.1. Program Management

Work performed in support of this Performance Work Statement requires management expertise, oversight, control, and direction in team building, communications, time management, quality assurance and quality control and management, procedure development, risk management, configuration management, cost management, and software integration and customer service.

Under the Program Management scope, the contractor must provide the following services:

- Provide Program Management oversight for the contract. The contractor Program Manager must monitor each project and execute rapid corrective actions if issues arise (technical, cost, or other.) If the initial corrective actions are unsuccessful, the contractor must reevaluate and apply additional corrective actions.
- Communicate via phone, online meetings, or in-person with EPA Project Managers to ensure the project is being managed successfully and customer satisfaction is high. The minimum will be bi-weekly or more frequently depending on the need.
- Participate in all initial/kick-off meetings for a project and additional ones as necessary.
- Hold contract/project status meetings with the PMO Director, the COR, and other OW staff once per month. Provide detailed project status, expenditures, risks, and report on other issues.
- Oversee the work of the Project Manager, the contractor staff, and any sub-contractors.
- Ensure the Project Team's staff have the skills to deliver the requirements efficiently and effectively for the project.
- Program Management must include drafting and finalizing the Task Order Management Plan.
- The contractor must provide project control and monthly invoice preparation and submission and loading copies to OW's SharePoint Site or using an alternative mutually agreed-upon method.
- Review existing change management, track policy and procedures, and update them as needed to address change requests and application defects from receipt through review, analysis, development, and installation.
- Effectively address changes in work priorities and staffing.
- Ensure proper staffing with the requisite technical and managerial skills.
- Prepare cost estimates and revise these as necessary for the project.
- Ensure quality and timeliness of deliverables.

- Develop, coordinate, update, and maintain all applicable Standard Operating Procedures; Ensure adequate documentation meeting standards throughout the entire software development life cycle.
- Select and follow the best development methodology (waterfall, agile, spiral, etc.) to ensure cost-effective results.
- Enforce proper configuration management and version control.
- Ensure compliance with all Agency 508 compliance regulations.
- Ensure compliance with all Agency security and IT regulations.
- The contractor must deliver 12 monthly reports per year that provide a status for each project. This report must be delivered to the CO, the COR, ACOR, and the EPA Project Manager (see Appendix A.3 for requirements.)
- The Program Manager must participate in any discussions on questions regarding monthly invoices and take corrective actions as necessary.
- Track and record funding modifications, and monthly spending status and maintain a history of all funding actions, spending, and status for the Base Year, Option Period 1, and Option Period 2 within OW's SharePoint Site (See Appendix A.4 for requirements.)

4.2. Technical Application Architect Responsibilities

Under the Project Management scope, the contractor must:

- Participate with EPA Project Team to scope the project, make technology recommendations, evaluate technical feasibility, communicate effectively with EPA Team, and carry out other duties to ensure project success.
- Work closely with the Program Manager to ensure status, risks, and issues are communicated to appropriate levels of management.
- Develop/Enhance architectural diagrams as necessary at the Project-level and at the level of detail needed to accomplish the goals of each project.
- Add value to the program and project by providing technical insights and innovative approaches to challenging problems.
- Ensure projects have automated testing to the extent possible with adequate coverage and establish automation testing guidelines in collaboration with EPA.
- Work with the COR, Technical Leads in OW and OMS to co-ordinate upgrades and modernization initiatives.
- Suggest improvements in technology and evaluate opportunities for Business Process Re-Engineering as appropriate for each application.
- Identify opportunities to consolidate data t reduce redundancies, work with EPA Project Managers and the Program Manager to appropriately prioritize them.
- Undertake efforts to minimize technical debt and provide quarterly updates at a minimum on the technical debt across the applications under this contract.

4.3. GIS Specialist Responsibilities

Under the Project Management scope, the contractor must:

- Oversee all GIS-related work on projects with a cartographic or geographic aspect, particularly ATTAINS, WQX, How's My Waterway, WATERS, eBeaches, and DARTER
- Work with the project manager to ensure adequate staffing of qualified GIS developers and analysts on the contract
- Ensure that appropriate decisions are made where GIS processes such as projections, spatial measurement, or spatial joins are necessary
- Provide expertise in GIS-specific tools and services used or supported under this project, including but not limited to:
  - Esri ArcGIS Pro server and desktop
  - Oracle Spatial
  - PostGIS
  - KMZ services and Google Earth
  - Esri ArcGIS Online (including the EPA GeoPlatform)
- Lead testing and work with EPA's computer center to correct problems with GIS tools and services
- Suggest improvements which will improve efficiency and/or uptime of GIS-related tools and services or lower EPA's cost of ownership
- Suggest new (particularly open source) tools that EPA should consider and provide an understanding of their strengths, weaknesses, and how they would fit into EPA's established GIS tooling
- Provide tier 3 helpdesk support for GIS-related problems or questions

4.4. Software Development Support

As noted above, OW uses multiple software applications to support its missions. Therefore, the contractor must enhance and support these production applications and implement upgrades or new applications as the need arises over this Task Order (within the ceiling limitations).

Work to be accomplished will focus primarily on the systems listed in Appendix A, but other additional requirements or new system work may be required as described in Section 3 under Optional Quantities.

Under the Software Development Support task, the contractor must:

- Conduct requirements analyses and other analyses included in the design phase, development or other tools/methods, implementation, and documentation for the development and maintenance of systems for long-term use.

- Assist with developing business case documents by providing feasibility and high-level business requirements analyses for existing systems or new requests and development cost estimates.
- Utilize the best development methodology that delivers the most effective results to meet the project's goals, including costs, schedule, and performance for all work done under this contract. In addition, the methodology will allow users to examine the validity and accuracy of the business requirements and to respond to the usability and performance of new developments.
- Consider Cloud First/Low-code/No-code solutions to minimize custom coding wherever possible.
- Integrate Agency and OW shared services and the Agency's Digital Strategy into the design of systems where applicable.
- Ensure that unit and other contractor-level testing and acceptance tests occur by a sound test plan (in an automated manner to the extent possible) to minimize defects during user acceptance testing.
- Provide a framework for user testing and acceptance.
- Identify risks associated with the development of new software efforts, including extension systems, analyzing, and classifying those risks as to severity and likelihood, and identifying techniques to mitigate the risks.
- Collect, develop, and analyze software requirements using facilitated user sessions.
- Develop use cases and determine the prescribed set of artifacts for each phase of each development cycle.
- Develop applications in a multi-platform environment, using object-oriented programming, with an understanding of internet and Cloud architecture.
- Develop software application prototypes for evaluation.
- Provide front-end design for the application user interface as necessary.
- Conduct usability analysis and assessments.
- Comply with Section 508 compliance regulations for all development efforts. All deliverables must be compliant with Section 508 regulations or deficiencies must be known and documented as part of deliverable acceptance.
- Develop, document, and adhere to adequate and appropriate Configuration Management practices.
- The Amazon Web Service (AWS) or equivalent development environment in the cloud must be FedRamp compliant. No other development activities can be co-mingled with the development environment and must be billed to EPA under ODC (Other Direct Costs).

4.5. Computer and Software Operations and Maintenance

The contractor must provide software operations and maintenance support for applications under this Task Order as most of these systems are in mixed development

mode (i.e., enhancements are continually added) while operation and maintenance are also occurring. Most of the Office of Water software applications are hosted in EPA's National Computer Center (NCC), but other software may eventually be hosted in different Cloud Environments, including Federally approved commercial Cloud providers.

Under this task, the contractor must:

- Monitor, maintain, enhance, and manage all existing software applications and correct defects (e.g., bugs or minor fixes) as they become known within the contractor's development environment as well as in EPA Staging and Production Environments. Keep software up to date with the latest patches, security, and any maintenance as required for the system or application to operate effectively. Software engineering best practices and techniques will be used for application modifications and new system development. Data uploads, refreshes, and other management of data for each system.
- Some of the systems will require Help Desk Support and contractor staff to respond to queries from users or other customers of the system. Questions and additional information will be handled via email or a Kanban System.

5. Technical Direction, Deliverables, and Delivery Schedule

5.1. Technical Direction

OW will use Agile and Kanban Tools for technical direction. The specific, documented technical direction will be delivered in OW's Jira tasking system and managed at regular Scrum and Sprint or other project meetings for each project under this Portfolio.

The contractor must not perform any tasks under this contract that constitute work of a policy, decision-making, or managerial nature that is the direct responsibility of the EPA. EPA will provide all content. EPA will initiate communication with the user community for new processes and procedures.

5.2. Delivery Schedule

Deliverable/Activity Due Date	Deliverable/Activity Due Date
Kick-Off Meeting	5 business days after the contract award
Draft Task Order Management Plan	10 business days after the kick-off meeting
Final Task Order Management Plan	5 business days after Agency comments
Project-specific meetings	5 business days after the contract award
Project Documentation	Based on each Project's Requirements*
Quality Assurance Plan and Surveillance Plan	Will be approved bi-laterally if changes are required.
Data processing, O&M activities	All activities are loaded and tracked in JIRA
Project and Contract status Meeting with COR	In-person or via Microsoft Teams or email, weekly

Weekly report	If necessary, based on the individual project
Monthly Status Reports	Due on the 6th day of each month.
Monthly Program Reviews	Due on the 10th day of each month
Invoices and monthly tracking spreadsheet	Due on the 10th day of each month

* Project Documentation – in most cases, EPA's Atlassian JIRA and SharePoint Environment will be used to manage project documents, requirements, operations, and maintenance tasks. At the minimum, the following are required: Project Charter, Project Plan outlining the goals and conditions of the project, Design Document with Functional and Detailed System Diagrams, Deliverables and the delivery schedule, Cost Estimate, Requirements documents (e.g., User stories, Use Cases may be managed in Jira instead of an actual document), O&M plan, Contractor's internal testing plan, User Acceptance Testing plan for interim and final deliverables. The scope of each of these deliverables will be based on the complexity and scope of the project.

5.3. Notice Regarding Late Delivery

The contractor must notify the Project Managers and COR as soon as it becomes apparent to the contractor that a documented scheduled delivery will be late. The contractor must include in the notification the rationale for late delivery, the expected date for the delivery, and the project impact of the late delivery. The Project Managers and the COR will review the new schedule and provide guidance to the contractor.

6. Quality Assurance and Monitoring of Work Deliverables

The Program Manager, Project Managers and COR must monitor all work under this contract. Final inspection and acceptance of all work performed, reports, and other deliverables must be completed by the Project Managers and COR by the QASP.

The EPA Project Managers for each Project under this Task Order are responsible for the following:

- Setting task priorities and revising task priorities when necessary
- Communicating these priorities to the contractor
- Communicating to the COR about any anticipated delays and then requesting the modification of delivery dates and schedules of projects
- Formally assessing the level of contractor performance and ascribing the extent to which quality assurance and acceptable performance levels have been met

6.1. General Acceptance Criteria

General quality measures as set forth below must be applied to each work product received from the contractor under this statement of work.

- Accuracy – Work Products must be accurate in presentation, technical content, and adherence to accepted elements of style
- Clarity – Work Products must be clear and concise. All diagrams must be easy to understand and be relevant to the supporting narrative

- Consistency to Requirements – All work products must satisfy the requirements of each Project's goals and specific software requirements and, in the case of O&M, the execution of the activity
- File Editing – All text and diagrammatic files must be editable by the Government
- Software – the contractor must thoroughly test all software to ensure that all functionality is validated and the application is suitable for production
- Format – Digital work Products must be submitted in an EPA-approved electronic format. Non-digital work products (such as hard-copy reports, oral reports, etc.) must be submitted in a mutually agreed-upon format
- Section 508 Compliance – Work Products must be compliant with Section 508 or any non-compliance must be documented as part of deliverable acceptance
- Timeliness – Work Products must be submitted on or before the documented due date specified within each Project's Plan or other project tracking system and submitted by a later scheduled date determined by or approved by the Government
- Costs – the contractor must track each Project's funds and communicate in writing the status of the funds monthly or more frequently depending on the need for a particular project

6.2. Quality Assurance Surveillance Plan

EPA will use a quality assurance surveillance plan (QASP) that defines standards, measurement. Methodology, frequency, and positive or negative incentives. The COR will conduct random surveillance of work products. The contractor must develop their internal Quality Assurance Plans to ensure that deliverables meet the standards identified in the QASP.

7. Government Furnished Equipment, Government Provided Information, and Applicable Documents

7.1. Government Provided Equipment

If Government Furnished Property is provided for this task order, the GFE will remain the property of the Government, and under that entity's control at all times. The Government retains the right to withdraw or reallocate these resources at any time, and without notice, during the performance of this contract.

7.2. Government Provided Information

The contractor will be provided with current task order working papers, project descriptions, program briefing material, other pertinent information, and other documentation or material required to carry out the tasks described within this contract.

8. Place of Performance

Work will be performed primarily at the Contractor site. Contract meetings and other Project-specific meetings can occur at the government site, which is located at:

USEPA William Jefferson Clinton East Building (WJC East)
1201 Constitution Avenue N.W.
Washington, DC 20004

9. Period of Performance

The period of performance of this contract will consist of one (1) twelve-month base period, four (4) twelve-month option periods, and one (1) six-month option to extend period.

10. Hours of Work

The anticipated hours of performance for the contractor will be from 6:00 a.m. to 6:00 p.m. Monday through Friday. If there is a necessary change to the hours of performance, the Program Manager must obtain written approval from the CO to make these changes. In addition, weekend, after-hour, and Federal holiday on-call coverage may be required for systems support. The COR and the contractor must mutually agree upon all deviations to this schedule not mentioned herein, and the Program Manager must first obtain written approval for any overtime from the COR.

10.1. Scope of Inspection

The project manager will inspect all deliverables for content, completeness, accuracy, and conformance to Task Order requirements (for critical milestone deliverables identified in each project's project plan). Inspection may include validation of information or software using automated tools and testing of the deliverables, as specified in the Task Order. The COR will meet Project Managers and use the surveillance frequencies or other methods to inspect deliverables in accordance with the QASP.

The Government will provide written notification to the contractor of acceptance or rejection of all final deliverables. All notifications of rejection will be accompanied with an explanation of the specific deficiencies causing the rejection.

11. Basis of Acceptance

The basis for inspection/acceptance will be compliance with the requirements set forth in the Task Order, the contractor's proposal, and other terms and conditions of the contract, including the Government Quality Assurance Surveillance Plan (QASP) or another documented project-specific metric. Deliverable items rejected must be corrected by the applicable clauses.

Reports, documents, and narrative-type deliverables will be accepted when all discrepancies, errors, or other deficiencies identified in writing by the Government have been corrected. If the draft deliverable is adequate, the Government may accept the draft and provide comments for incorporation into the final version.

All the Government's comments to deliverables must either be incorporated in the next version of the deliverable, or the contractor must demonstrate to the Government's satisfaction the reason(s) why such comments cannot be incorporated.

For example, in the case that the Government finds that a draft or final software release contains bugs that were identified/reported during formal user testing and these bugs were not corrected to match the specification. If that were to happen, that release may be rejected without further review and returned to the contractor for correction and resubmission without any additional cost to the Government.

12. Information Security Training Requirements

Addendum 2 to PWS Cybersecurity Tasks Checklist

(a) The Contractor must ensure that Contractor personnel with significant information security responsibilities complete specialized information security training based on the requirements of the EPA role-based training program *(program provided after Contract award)*. The objective of the information security role-based training is to develop an EPA information security workforce with a shared understanding of the concepts, principles, and applications of information security to ensure the confidentiality, integrity, and availability of EPA's information and information systems. The Contractor is required to report training completed to ensure competencies are addressed. In addition, the Contractor must ensure employee training hours are satisfied by EPA Security and Privacy Training Standards *(provided after the Contract award)*. The Contracting Officer's Representative (COR) will provide additional information for specialized information security training based on the requirements in paragraph (b).

(b) The following role-based requirements are provided: Completion of annual EPA security awareness training and annual completion of two security role-based training opportunities similar in scope and complexity to EPA's role-based training opportunities.

(c) The Contractor must ensure that all IT and Information Security personnel receive the necessary technical (for example, operating system, network, security management, and system administration) and security training to carry out their duties and maintain certifications.

(d) The Contractor agrees to insert in each subcontract or consultant agreement placed hereunder provisions that must conform substantially to the language of this requirement, including this paragraph unless otherwise authorized by the Contracting Officer.

13. Other Training of Contractor Employees

The contractor must provide employees with the required core skills to perform their job duties. The contractor is responsible for all costs related to training its personnel, including travel costs for such training to build or maintain the expertise of its employees assigned to this contract. This includes, but is not limited to, such things as training for replacement contractor employees; to keep contractor employees abreast of advances in state of the art; training contractor employees on equipment, computer languages, or computer operating systems that are available on the commercial market; or training expected for maintenance of skill sets to perform their job duties, (e.g., to meet special requirements that are unique to a particular task).

For example, should the CO and COR give prior written approval for training needed to meet special requirements that are unique to OW regarding a task or Project under this PWS and provide written approval of an itemized cost estimate, the Government will pay for allowable expenses related to that training. Also, limited training of contractor employees may, but is not required to be, authorized when the Government changes IT/IM software or hardware during the performance of an ongoing task and the CO and COR unilaterally determines that it is in the best interest of EPA to pay some or all expenses.

Contractor employees will attend seminars, symposiums, or user group conferences only if the Government certifies that attendance is mandatory for the performance of the task requirements and the COR and CO approves such training in writing in advance.

The contractor will be responsible for keeping contractor employees trained and abreast of advances in the standard IT products implemented in OW and the Agency.

14. Non-Conforming Products or Services

Non-conforming products or services will be rejected. The contractor will correct deficiencies within ten (10) workdays of the rejection notice. Suppose the deficiencies cannot be corrected within ten (10) workdays. In that case, the contractor will immediately notify the Government of the reason for the delay and provide a proposed corrective action plan within ten (10) working days with the schedule and strategy for correction.

15. Transition

The contractor must ensure the continuation of work and the orderly transition of responsibility to the new contract. This includes developing a phase-out plan to the new contractor within 15 days of contract award. Transition activity's main goals are to ensure all software, documentation, and other artifacts are provided in an orderly manner with a high degree of communication to ensure limiting project downtime.

Phase-Out Transition Tasks will include:

- Creating and executing a transition plan where all project artifacts, the system's code, database and all its components, system access, system architecture, and project documentation are provided to the new contractor or another entity within five (5) days of the contract award. The transition plan will be developed with input from the COR.
- Holding an all-day initial transition meeting with the incoming contractor and other individuals two days after the contract award is signed.
- Up to three additional all-day sessions with the incoming contractor and other individuals to assist the transition. The Program Manager, the Project Manager and up to two other key project staff for each project must be present for the transition meetings.
- Transitioning any property including software licenses and subscriptions to the incoming contractor or other entity within three (3) days of transition kickoff meeting.
- Returning all Government-issued badges if applicable within ten (10) days of contract award signing.

16. Access to Government Electronic Mail

All Contractor staff that has access to and use of the Government electronic mail (e-mail) must identify themselves as contractors on all outgoing e-mail messages, including those that are sent in reply or are forwarded to another user. To best comply with this requirement, the contractor staff must set up an e-mail signature ("AutoSignature") or an electronic business card ("V-card") on each contractor employee's computer system and Personal Digital Assistant (PDA) that will automatically display "Contractor" in the signature area of all e-mails sent.

17. Other Direct Costs (ODCs) – Travel, Cloud Hosting, and Miscellaneous Incidental Material & Services

17.1 Travel - Travel may be required for Contractor staff to attend information-gathering meetings, management briefings, and other authorized meetings. The Contractor will typically be notified in advance. All travel must be authorized in advance and in writing by the COR and CO, and be in accordance with current Federal Travel Regulations. The following requirements apply:

- The Contractor will be reimbursed for direct transportation, lodging, meals, and incidental expenses of personnel authorized to undertake out-of-town and overnight travel under this PWS. Such costs will be reimbursed in accordance with the established policy of the Contractor and to the extent that they are reasonable and allowable as provided in FAR 31.205-46.
- Costs incurred for lodging, meals, and incidental expenses will be reimbursed only to the extent that they do not exceed the daily the maximum per diem rates in effect at the time of travel as set forth in the Federal Travel Regulations or Joint Travel Regulations.

- Air fare costs in excess of the lowest customary standard, coach, or equivalent air fare offered during normal business hours will not be reimbursed unless such accommodations are not available, and the Contractor certifies to this fact in the voucher or in their documents submitted for reimbursement.
- The Contractor will be reimbursed for the cost of out-of-town and/or overnight travel performed by its personnel in their privately-owned automobiles, at the current rate set forth in the Federal Travel Regulations, not to exceed the cost by the most direct economy air route between the points so traveled. If more than one person travels in such automobiles, the Contractor must make no additional charge for such travel.

No travel costs for contractor personnel traveling from place of residence to and from the normally assigned work site will be reimbursed by the Government.

The Government will identify the need for a Trip Report (if required) when the request for travel is submitted. The contractor must keep a summary of all long-distance travel, to include, at a minimum, the name of the employee, location of travel, duration of trip, and POC at travel location.

17.2 Cloud Hosting - The Amazon Web Service (AWS) (see para 4.4 above)

The contractor will maintain environments (Development, Demo, etc.) outside of the EPA Firewall which will be paid for under Other Developmental Costs (ODC's). The current platform for these environments is AWS which closely mimics the environments inside the EPA firewall maintained by the EPA.

17.3 Miscellaneous Incidental Material & Services

As part of the Software Development Life Cycle (SDLC) there are other licenses (Eg: for utility software, IDE's, etc.) and paid libraries that may be used in the course of development to streamline the development, testing, and deployment of the applications. These costs should be explicitly pre-approved in writing by the COR and CO and will be included in the miscellaneous incidental material & services.

Appendices

- Appendix A.1 (Table A.1 and A.1.2) lists the functional and technological requirements (e.g., database, programming etc.)
- Appendix A.2 provides more detailed information for the systems listed in Section 3
- Appendix A.3 Requirements for Monthly Reports
- Appendix A.4 Requirements for Monthly Cost-Tracking Spreadsheets

Appendix A.1: OW Functional and Technological Requirements

TABLE A.1 – OW Project Management, Development and Operations Technical Requirements

Support Area	Category	Requirement
Project Management	Project Management Software/Tools	Atlassian Jira
		Project-to-project security isolation such that any proprietary intellectual property and financial information (e.g., rates) are protected from any competing contractor but visible to a Federal agency's staff and management
		Project Management using Project Management Institute (PMI) approaches and methodologies or similar methods
Full Software Application Lifecycle Support	Software Design, Development, Deployment	Full system software design, development, and deployment methodologies (e.g., waterfall, agile, spiral); software architecture compliant with Federal Information Technology Acts, policies (e.g., Clinger-Cohen, Section 508), and Agency IT Policies.
		Virtual Development Environment at the contractor site. Staging and Production Implementation at EPA's National Computer Center (NCC) or another Government Agency/Office
		Developing a central repository for artifacts of the application development process such as code files, documentation, collaboration capabilities and artifacts (e.g., discussion forums and transcripts thereof, virtual meeting places, etc.) with complete versioning capability and support for preventing overwriting through check-in/check-out capabilities. Providing the isolation and intellectual property protections for multiple contractors on same development environment.
	Design/Analysis /Support/Documentation	Project artifacts as part of development that include feasibility studies; alternative analysis;

		requirements; design documents; communication plans; risk plans; and testing plans. Clean Water Act (CWA); Safe Drinking Act (SDWA); and the regulatory and programmatic experience necessary and demonstrated environmental qualifications to successfully implement OW's program mission
Operations and Maintenance		Operations and Maintenance of all Software applications and attendant components (e.g., database, web pages etc.) under the Task Order Deploying and maintaining applications for government cloud offerings, such as with EPA's National Computer Center (NCC) or other provider.

TABLE A.1.2 – OW Software, Hardware, and other Technology Requirements	
Category	Demonstrated Experience (with latest releases as well as legacy versions)
Database and related technologies	Microsoft SQL Server; Oracle; Oracle Spatial; ESRI Geodatabases; PostGreSQL; MySQL,NoSQL, RedGate and others
Geographic Information Systems	Full suite of ESRI products with emphasis on ArcGIS Server, ArcSDE; ArcGIS and ArcGIS Online; Google Earth; Bing Maps; PostGreSQL; General GIS (projections, tiling, WMS, WFS, WPS, etc.); and APIs such as ESRI JavaScript APIs
Programming and Query, ETL, Design etc.	Database stored procedures (Oracle, Microsoft, Open Source); SQL; PL/SQL; SAS; ASP; Microsoft.net; Java; APEX; Google Webtool kit; JavaScript; JSON; Microsoft Visual Studio; Adobe ColdFusion; C; C++; C#; Google Analytics; Python; PERL; PHP; XML; HTML; Informatica; Hibernate, Spring Framework, JBOSS DROOLS business rules engine; Business Intelligence (e.g., OBIE, Business Objects), Telerik; Kendo
Office Applications including Email and other Productivity or Administrative Software	Microsoft Office 365 - Word, Excel, PowerPoint; Project; Visio; Outlook; Microsoft Teams; Atlassian Products
Web Content Management, Publishing	Drupal; Adobe Acrobat; Adobe Photoshop; Adobe Illustrator; Adobe Creator Cloud; Adobe Creative Suite
Project Portfolio Management and Collaboration	Microsoft SharePoint; Microsoft Project Server; Microsoft Project Professional; Atlassian Jira and Confluence
Cloud	All top (e.g., Microsoft; Google; Amazon; Oracle; IBM) commercial and Federal Cloud Systems/Services (IaaS, PaaS, SaaS). Also includes hyper-threading models that support capacity on demand
Low Code SaaS	Salesforce, Microsoft Power Platform, ServiceNow. Other low-code technologies are under evaluation and the list will evolve during this contract.
Training	FedTalent

Appendix A.2 – OW IT System Descriptions

Watershed Assessment, Tracking & Environmental Results System (WATERS) System Description

Background and System Description

WATERS is a suite of publicly available data, web services, and tools that expose hydrographically linked data from across OW and other EPA systems. WATERS provides a common hydrography to combine water data from across EPA. The WATERS architecture was initiated in 2001 to develop a geospatial framework for uniting water quality information previously only available from several independent and unconnected data sources.

WATERS links information from various EPA water programs to the digital national surface water network known as the National Hydrography Dataset Plus (NHDPlus). NHDPlus incorporates the best features of the United States Geological Survey (USGS) National Hydrography Dataset (NHD), the National Elevation Dataset (NED) and the Watershed Boundary Dataset (WBD) and the Reach Address Database (RAD). RAD stores the stream/water-body-based addresses for features located on the NHDPlus network. Examples of features include water quality monitoring stations, wastewater discharge facilities/pipes, and waterbody impairments. NHDPlus has other components go beyond basic maps using different web services.

The stream addresses of water body features may come from existing EPA databases – for example locations of discharges from facilities under the National Pollutant Discharge Elimination System (NPDES) comes from EPA databases. Other information, such as impaired or assessed stream segments are submitted by States as part of the Clean Water Act's 305(b) and 303(d) Programs. A substantial part of the work for RAD is periodically updating the stream addresses for various features.

Using WATERS, environmental professionals and interested citizens can access comprehensive information via maps and data services about the quality of the nation's surface water. Available information includes but is not limited to:

- designated use(s) of a waterbody
- water quality monitoring results
- assessments of water quality
- support compliance inspections and enforcement
- causes and sources of impaired waters
- public beach closures
- location of dischargers

Using the WATERS web, analytic and map services framework, applications can be developed by anyone to depict maps or analyze data about streams and other types of waterbodies. Using

the WATERS geospatial architecture, the integrated water-related geospatial data can then be consumed by users (both EPA- and non-EPA) via services/APIs by other applications to generate maps, analyze water-related data and make this available via mobile, tablet, laptop devices.

Laws, Regulations, or other business case it supports

WATERS supports the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA) and any other water-related Act, regulation or policy that requires integration, visualization using a geo-spatial framework.

Technologies

WATERS is comprised of the following primary components:

- **Datastore** – relational database management system containing the following data sets
  - NHDPlus, an electronic map of streams, rivers, lakes, and other water features at the 100,000:1 resolution. NHDPlus enhances the Unites States Geological Survey's NHD product by including other attributes such the National Elevation Dataset (NED), watershed boundary dataset, and stream network information. NHDPlus supports geo-spatial analysis such as creating maps and analyzing relationships among watershed features.
  - Reach Address Database (RAD), which stores the addresses of features, which include water quality monitoring stations, wastewater treatment plants, impaired waters, and other physical entities of interest for water quality and watershed-based analysis. Each feature has a unique stream address (analogous to a house or a building on a street map) and a Program Identifier. For example, a water quality monitoring station from EPA's WQX database will have the stream address and the monitoring station id. This allows users to connect the water quality station's location on NHDPlus with detailed station information such as water quality sample date, sample time, sample identifier, and sample value.
- **Web Services** – a suite of web enabled endpoints that expose the data contained in WATERS and performs analytical processing:
  - **Mapping Services** – for displaying the spatially enabled data contained within WATERS
  - **Analytical Services –** for perform complex analysis on the data contained within WATERS

Applications – various applications that provide easy access to the data contained within WATERS (such as the WATERS GeoViewer)

Additional information can be found here: https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system

The service-oriented architecture of WATERS is used by EPA, other Federal Agencies, State and the private sector. Below are a few representative consumer applications that depend upon services offered by WATERS:

- National Environmental Policy Act System (NEPAssist)
- Enforcement and Compliance History Online (ECHO)
- How's My Waterway (HMW)
- Cleanups In My Community (CIMC)
- The Assessment, TMDL Tracking and ImplementatioN System (ATTAINS)
- Clean Water Needs Survey (CWNS)
- Discharge Monitoring Report (DMR) Pollutant Loading Tool
- EnviroAtlas
- eBeaches
- National Aquatic Resource Surveys (NARS)
- Grants Reporting and Tracking System (GRTS)
- ChesapeakeStat and the Chesapeake Bay TMDL Tracking and Accounting System (BayTAS)
- Drinking Water Mapping Application for Protecting Source Waters (DWMAPS)
- Arc Hydro
- Facility Registry Services (FRS)

The web services offered by WATERS include the following:

Web Service	Web Service Description
Event Indexing Service	The Event Indexing Service allows users to dynamically index features against NHDPlus hydrology to create RAD-ready events.
Point Indexing Service	Service providing point indexing via distance or NHDPlus flow direction raindrop indexing to NHDPlus features.
Name Service	Advanced query function to find water feature names and provide general location information for NHDPlus features.
Upstream/Downstream Search Service	The Upstream/Downstream Search service is designed to provide standard traversal and event discovery functions upon the NHDPlus stream network.
Navigation Service	The Navigation service provides standard stream traversal on the NHDPlus stream network.
Navigation Delineation Service	Service providing basin or other feature type delineation based upon navigation results.
RAD Event Info Service	Service providing detailed information on Reach Address Database events.
Lookup Services	Query services returning small non-spatial result sets of WATERS data.
Results Queue Service	Service for managing asynchronous processing of other WATERS services.

Spatial Assignment Service	Service providing spatial interaction information for a given geometry using various layers within WATERS.
Watershed Characterization Service	Service providing a variety of information on NHDPlus 2.1 hydrologic feature attributes.

And a few of the mapping services offered by WATERS include the following:

Mapping Service	Mapping Service Description
NHDPlus	Features from NHDPlus dataset (including WBD/HUCS)
303(d)	Listed as Impaired Waters
305(b)	Assessed Waters
BEACH	Beach designations
CWNS	Clean Watersheds Needs Survey locations
FISH	Fish Consumption Advisories
FSHTD	Fish Tissue Data
GRTS	Nonpoint Source Projects areas
NPDES	Facilities that Discharge to Water
WQP	Water Monitoring Locations
TMDL	TMDLs on Impaired Waters

WATERS leverages numerous technologies including but not limited to Oracle Enterprise Edition with the Oracle Spatial extension, PL/SQL, Esri (ArcGIS Server, ArcSDE (Spatial Database Engine), JavaScript API, ArcGIS Desktop, ArcMap, ArcGIS Pro, ArcGIS Online), Google Earth, PostgreSQL, PostGIS, OpenLayers, Leaflet, ArcGIS API for JavaScript, Python, SoapUI, Jenkins, Apache/MOD_PLSQL, Central Data Exchange (CDX) dataflow hosting, Cloud.gov/Cloud Foundry, Amazon Web Service (AWS) hosting, GDAL/OGR and Drupal.

Types of Users

WATERS exposes its data and analytical functions via publicly available web and mapping services. It's hard to qualify the types of users specifically as WATERS has never required a login/key to access the web services which limits the usage reporting we can provide. Over the years, WATERS has been contacted by the regulated community, States, Tribes, Territories, EPA Regions, EPA Headquarters, commercial companies, academia, and public citizens.

System Access

No registration or log-in – the purpose is to enable broad access to geo-spatial products. Users can access the Watershed Assessment, Tracking & Environmental Results System (WATERS) datasets and capabilities by consuming publicly available mapping services, analytical services and tools such as the WATERSKMZ and the WATERS GeoViewer.

Help Desk Support

Questions and issues handled via Jira and requests typically come in via email. There is no dedicated phone support.

Water Quality Exchange (WQX)

Background and System Description

EPA's WQX is the data format and mechanism for publishing monitoring data available through the Water Quality Portal. The Water Quality Exchange (WQX) replaces the Storage and Retrieval (STORET) Data System as the mechanism for data partners to submit water monitoring data to EPA. The Water Quality Portal (WQP) is the mechanism for anyone, including the public, to retrieve water monitoring data from EPA WQX/STORET, USDA STEWARDS, and USGS NWIS/BIODATA. The WQX database contains raw biological, chemical, and physical data from surface and groundwater sampling conducted by federal, state, and local agencies, Native American Tribes, volunteer groups, academics, and others. WQX includes data from monitoring locations in all 50 states as well as multiple territories and jurisdictions of the United States. Most data are from ambient waters, but in some cases finished drinking water data are included as well. Data owners are responsible for variations in data completeness from state to state.

For more general WQX and WQP data information, please see:
https://www.epa.gov/waterdata/water-quality-data

Laws, Regulations, or other business case it supports

Water quality monitoring is a crucial aspect to protecting water resources. Under the Clean Water Act, state, tribal and federal agencies monitor lakes, streams, rivers, and other types of water bodies to determine water quality condition. The data generated from these monitoring activities help water resource managers know where pollution problems exist, where to focus pollution control energies, and where progress has been made.

Technologies

EPA's Water Quality eXchange team, the Chesapeake Bay Program, and EPA Contractor Gold Systems have developed, tested, and utilized a new way to submit data to WQX and the Water Quality Portal. Until very recently the only two methods to publish your data via WQX were to set up an automated node to node communication via EPA's Exchange Network or to manually upload your data using the WQX Web user interface. The Chesapeake Bay Program recently began publishing their data using automated API services through WQX Web. The new WQX Web API services allow a data submitter to automate data submissions like a node but through WQX Web. The API is intended to provide programmatic access to WQX Web data submission functions and procedures. The intended audience is programmers who are familiar with the concepts and techniques of WQX data submissions and Web Services. This project is innovative because maintenance on the data mapping is managed within the WQX Web. The interface makes maintaining data translation rules easy and user friendly. WQX Web maintains

compatibility with new business rules, elements and xml schema validation using automated API services through WQX Web.

Types of Users

The WQX user community consists of federal, state and local agencies, Native American Tribes, volunteer groups, academics, and others. The best approach for your organization depends on in house technical expertise, data volume and resources. The WQX Web application requires less technical expertise and manual steps to upload. Custom WQX XML submission applications can be more efficient for organizations with larger databases and a need for automated submissions.

System Access

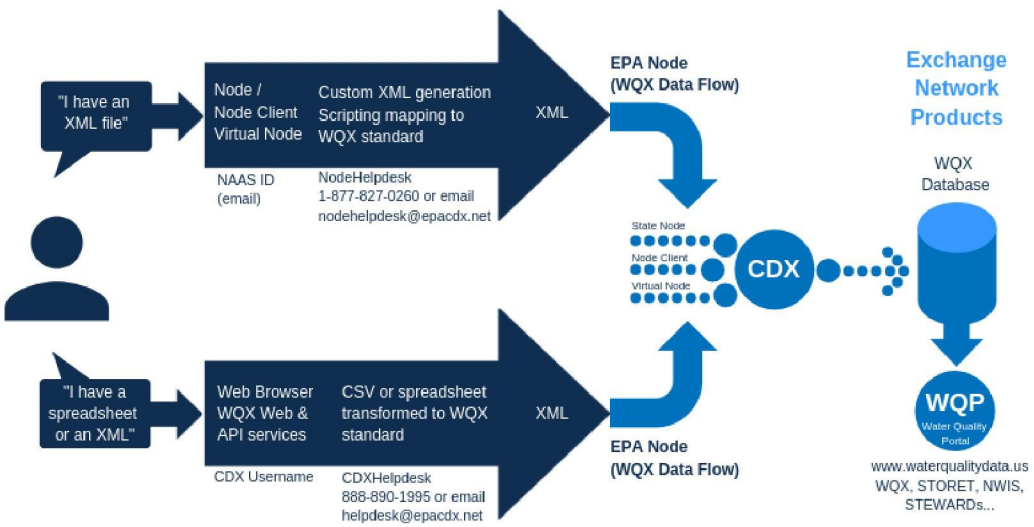
Access to the WQX Web API: The API is available to registered users within the WQX Web application. Before using the API, users must obtain a unique 88-character "Private Encryption Key": associated with a registered WQX Web user account. Developers / programmers may initial use their private and personal account. Later for releasing production applications one may email a request to register an application (WQX Web user) account.

All API access is through an authenticated Uniform Resource Identifier (URI). Data is submitted by sending an HTTP GET/POST to the URI with appropriate parameters supplied. The minimum parameters for every request include the UserID, Timestamp, and Signature, which includes the name of the method being invoked.

Help Desk Support

Help desk support via email wqx@epa.gov.

Functional System Diagram



Components:

- Node/Node Client/Virtual Node

- WQX/WQX Web/WQXWeb API services
- Central Data Exchange (CDX) network – user authentication
- Water Quality Exchange (WQX) database – Oracle RDBMS and inbound data transaction processing
- Water Quality Portal (WQP) warehouse – PostgreSQL warehouse and outbound wqx data standard services: QAQC rest web services

Electronic Beaches Environmental Assessment and Coastal Health (eBeaches)

Background and System Description

Between 1997 and 2002, state and local agencies voluntarily submitted data to EPA on their beach program monitoring and notification data through the National Health Beach Survey (NHBS). This national repository of beach data was stored in a Lotus Domino database, and the public had access to the data through the Beach Watch Website. The 2000 Beaches Environmental Assessment and Coastal Health (BEACH) Act requires EPA to collect, store, and maintain a public right-to-know pollution occurrence database on state designated coastal recreation waters. To meet these statutory requirements, EPA redesigned the NHBS database (as BEACON) to include a list of monitored coastal recreation waters and track beach monitoring and notification programs as defined by the BEACH Act and EPA's National Beach Guidance Document. EPA collects this data from eligible coastal and Great Lake states, territories, and some tribes as a BEACH grant requirement.

In 2016-2018, EPA enhanced the eBEACHES system by adding an online data verification and management tool called the eBEACHES Verification Tool (vT). This secure application allows data submitters to more quickly verify and correct the notification, monitoring, and location data viewed through BEACON, and will serve as another option for states to manage their state data (in addition to state systems and EPA's distributed MS Access Databases). As of 2019, only the notification datatype is in operation. The Project Workplan anticipates working on the monitoring and then the location data types in 2019-2020.

Laws, Regulations, or other business case it supports

The 2000 Beaches Environmental Assessment and Coastal Health (BEACH) Act requires EPA to collect, store, and maintain a public right-to-know pollution occurrence database on state designated coastal recreation waters. CWA SEC. 406:

‘‘(e) DATABASE.—The Administrator shall establish, maintain, and make available to the public by electronic and other means a national coastal recreation water pollution occurrence database that provides— ‘‘(1) the data reported to the Administrator under subsections (b)(3)(A)(i) and (d)(3); and ‘‘(2) other information concerning pathogens and pathogen indicators in coastal recreation waters that is made available to the Administrator by a State or local government, from a coastal water quality monitoring program of the State or local government; and ‘‘(B) the Administrator determines should be included.

”(g) LIST OF WATERS.— ‘‘(1) IN GENERAL.—Beginning not later than 18 months after the date of publication of performance criteria under subsection (a), based on information made available to the Administrator, the Administrator shall identify, and maintain a list of, discrete coastal recreation waters adjacent to beaches or similar points of access that are used by the public that— ‘‘(A) specifies any waters described in this paragraph that are subject to a monitoring and notification program consistent with the performance criteria established under subsection (a); and ‘‘(B) specifies any waters described in this paragraph for which there is no monitoring and

notification program (including waters for which fiscal constraints will prevent the State or the Administrator from performing monitoring and notification consistent with the performance criteria established under subsection (a)).

Technologies

The Electronic Beaches Environmental Assessment and Coastal Health (eBeaches) system is the electronic data transmission system that allows EPA to securely receive and display coastal and Great Lakes states, territories and some tribal (state) beach location, water quality monitoring and swimming advisory notification action data. State agencies send beach data via EPA's Central Data Exchange (CDX) and inputs for the eBeaches system include:

(1) notification data flows from the Program tracking, beach Advisory, Water quality standards, and Nutrients database (PRAWN) [READ ID 97505],
(2) water quality monitoring and station location information from the Water Quality Exchange (WQX) and STORage and RETrieval (STORET) system [READ ID 19910], [as of 2019, the data stored in STORET is now stored in the USGS Water Quality Portal (WQP)] and
(3) beach location data from the Reach Address Database (RAD) [READ ID 89814].

The public-facing online interface for the eBEACHES system is the BEach Advisory and Closing Online Notification (BEACON) system and National List of Beaches. BEACON includes an online application that provides several ways to access beach monitoring, notification, and location data, and the interactive National List of Beaches simply identifies the waters that are subject to reporting to the eBEACHES system. The system is routinely used by the public, as well as researchers, the press and travel industry. The revised BEACON system includes several enhancements from the previous version and now provides several ways to access beach monitoring and notification data. Enhancements include:

- Revised mapping interface: The new BEACON map includes many new features and has greater functionality.
- New report creation wizard: This tool walks users through three steps to select beaches, set search filters and view BEACON reports.
- New RSS feed generator: The BEACON RSS Generator provides you with the ability to generate an RSS feed for an area of interest.

Each feature is accessible from the BEACON 2.0 interface.

The state-reported data found in BEACON come from the following EPA databases:

- EPA’s Reach Address Database (RAD). RAD contains geographic data that define each beach's location and the location of water quality monitoring stations. BEACON pulls this data to display the beaches and stations on a map. For more information on RAD, see EPA's Reach Address Database page.
- EPA’s Water Quality Exchange (WQX) and the USGS Water Quality Portal (WQP). WQX is the framework by which organizations submit data to the WQP. BEACON pulls water quality monitoring data from WQX/WQP. For more information on WQX/WQP, see Water Quality Data (WQX) page.

- Program tracking, beach Advisories, Water quality standards, and Nutrients (PRAWN). PRAWN stores beach administrative, advisory, and closing data. For more information on PRAWN, see Submitting Data to EPA page.

Types of Users

BEACON 2.0 reports have the functionality to accommodate a wide range of users. These user roles include:

- Basic: You can access reports via the map interface. Only five BEACON reports are available from the map interface, however, and selecting the reports via the map will return data for the select beach only.
- Intermediate: You can use the report creation wizard to select data by any combination of state/tribe/territory, county, and/or beach. The complete list of BEACON reports is available in the wizard.
- Advanced: Once a report is opened, you can use the filtering tools available on the report page to modify previously selected filters and/or add new, more advanced filters, as well as change the look and feel of a report.

System Access

Public users can access BEACON at: https://watersgeo.epa.gov/BEACON2/about.html

Jurisdiction data submitters must receive credentials from the EPA Central Data Exchange (CDX). Monitoring data (to WQX) and Notification data (to PRAWN) are submitted using those credentials via the Exchange Network Services Center: https://enservices.epa.gov/login.aspx

Help Desk Support

eBeaches provides support resources under this vehicle for Locational Data Support, Monitoring Data Support, Notification Data Support, BEACON, Verification Tool, and eBeaches Registration and General Support. For further information see: https://www.epa.gov/beach-tech/submitting-beach-data-epa#support

The Assessment Total Maximum Daily Load (TMDL) Tracking and Implementation System (ATTAINS)

Background and System Description

The Clean Water Act requires states, territories, and authorized tribes (states for brevity) to monitor water pollution and report to EPA every two years on the surface waters they have evaluated. This process is called assessment. Part of this process is deciding which waters do not meet water quality standards because they are too polluted. These degraded waters are called impaired (polluted enough to require action) and are placed on a state list for future actions to reduce pollution.

This information is reported to EPA by states and is compiled in ATTAINS. The information is made available via the ATTAINS web services, as well as through other EPA tools. For example, the upcoming How's My Waterway version 2 application will use the ATTAINS web services to provide users with easy access to view the information on the status of waters at the national, state, community, and site-specific waterbody levels. ATTAINS has been undergoing a redesign of the system. Prior to the ATTAINS redesign, workgroups provided input on the revised data model. The initial release of the redesigned ATTAINS system occurred in 2017. Development continues using a modified Agile approach to add new features and enhancements.

The ATTAINS system consists of a Graphical User Interface (GUI) and an Exchange Network component, both of which require individual login credentials. Registered users (primarily from state agencies or EPA) may access the system through the GUI or the Exchange Network to view, enter, edit, review, or approve data, depending upon the user's role. The GUI allows interaction with the data through web forms or by using .CSV files to upload or export sets of data.

In addition, the data are published through ATTAINS REST web services that provide Java Script Object Notation (JSON) output. Assessment decisions for Assessment Units are also summarized in geospatial services.

The general public may access the published data via these ATTAINS web services and geospatial services, or any tool that uses these services.

ATTAINS contains:

- A description of individual state-defined waterbody segments called Assessment Units
- A geospatial representation of those Assessment Units
- A state's water quality assessment decisions on their Assessment Units
- Plans to protect water quality on Assessment Units
- Plans to restore water quality on the degraded or impaired Assessment Units
- Statewide probabilistic survey results

- EPA's decisions on the states' proposed lists of impaired waters
- EPA's decisions on the proposed plans to protect and restore Assessment Units
- Information to help calculate program measures
- Input mechanism for states to provide metrics for the top of the How's My Waterway state page

ATTAINS geospatial data are associated with National Hydrography Dataset Plus (NHDPlus) catchments, using a Catchment Indexing Process (CIP) Tool. The water quality assessment decisions on the Assessment Units are summarized and published in geospatial services.

Laws, Regulations, or other business case it supports

ATTAINS contains the data collected under the Clean Water Act, Sections 303(d) and 305(b), or the Integrated Report (IR).

- Information about Integrated Report Guidance can be found on this page: https://www.epa.gov/tmdl/integrated-reporting-guidance-under-cwa-sections-303d-305b-and-314
- Information about Total Maximum Daily Loads (TMDLs) can be found on this page: https://www.epa.gov/tmdl
- Additional Information about ATTAINS can be found on the ATTAINS public website, on the Get Data and Upload Data tabs: https://www.epa.gov/waterdata/attains

Types of Users

Registered users in ATTAINS include data owners, such as staff from state or territory agencies, tribal organizations, and EPA. In addition, the decision data are used for other purposes such as water quality communication and education, creating protection and restoration plans, writing permits, environmental enforcement, and as a component of funding formulas such as the Variable Component of the Clean Water Act Section 106 grant. Data about the resulting decisions are consumed by the public via web services and geospatial services, as well as through websites or custom applications that use those services.

System Access

Data may be entered by either States, Tribes, or EPA through the Graphical User Interface (GUI) or the Exchange Network (EN). The level of access for each user varies by Organization and module. State and Tribal users can obtain Read Only, Data Entry or Administrator level access for each module. EPA users can obtain Read Only, Administrator, or Reviewer (which is higher than Administrator) level access for each module.

The modules in ATTAINS include: Assessment Units, Assessments, Actions, Reports, Priorities, Surveys, and Administration.

Help Desk Support

ATTAINS users can send emails to the ATTAINS Help Desk by emailing attains@epa.gov. The initial triage of emails is handled by contractors, and then the emails are distributed to the appropriate individuals. Some of those emails are handled by EPA, and other emails are handled by contractors under either this contract or a separate User Support contract, depending upon the issue.

Registered Users may interact with the ATTAINS system through a web Graphical User Interface (GUI). They may enter or edit data directly using web forms, or they may Batch Upload sets of data via .CSV files. In addition, state users with their own database may connect to ATTAINS using the Exchange Network to directly enter or update data. EPA can use the GUI to review and provide feedback on state-submitted decision data and plans for restoring or protecting waters. Outbound Services provide data back to Exchange Network Users to update the data in their local state databases. In addition, web services and geospatial services publish data about assessment decisions, restoration plans and protection plans, to the public so that the data can be consumed in websites or custom applications.

How's My Waterway

Background and System Description

How's My Waterway, version 2 is part of an effort by the Office of Water to improve public access to and foster an understanding of water quality information. OW consistently gets the same set of questions from the general public regarding the status of their drinking water, how water quality is impacted in their local rivers and streams, and what is being done to correct issues. Although this information exists in various websites across EPA, the public would need to be aware of all the available data resources and understand how to compile all the data together to provide a complete answer. How's My Waterway was designed to serve this need by providing a centralized information resource that ties all the data together. This centralized information resource also benefits EPA and the states by making it easier to observe discrepancies in the data and allow them to be corrected in the source system.

How's My Waterway is a map-centric, mobile-optimized web application that uses web services to integrate data from several systems at EPA and other agencies to provide the public with a comprehensive picture of water quality on 3 levels: community, state and national. How's My Waterway has been a multi-year effort in the Office of Water to prepare data for public consumption through electronic reporting, collaborate with state partners to get the message correct, and design it in a way that is public friendly and easy to understand. Another important aspect of this project has been working with other program offices at EPA and USGS to create new and augment existing web services to display information in How's My Waterway.

The How's My Waterway API architecture strategy uses web services to combine data from eight separate systems, consuming approximately 40 individual web service endpoints. This allows the data to be kept up to date in real time with the most current data in the source systems and does

not require any manual updates or data transfer processes. Because the application runs entirely on publicly available APIs, the information displayed in How's My Waterway is available for any other third party to include in their application.

How's My Waterway code is publicly available in the EPA Github organization at https://github.com/USEPA/mywaterway. Anyone will be able to reuse the How's My Waterway code for similar projects. The project is a model example of how to leverage various EPA web services using the popular React and Esri libraries to turn the raw service data into detailed maps and interfaces. It also provides an example of how the services fit together.

Laws, Regulations, or other business case it supports

Supports (indirectly) key water related laws and regulations by enabling users to view information about water bodies.

Technologies

ESRI ArcGIS

Cloud Application Platform as a Service: GSA Cloud.gov

REACT based platform

Types of Users

This is a public-facing system designed for SmartPhones, Tablets and laptops/desktops.

https://mywaterway.epa.gov

System Access

HMW is available to the public via https://mywaterway.epa.gov

Help Desk Support

Queries from users and other customers will be managed using a ticketing system.

Data on Aquatic Resources Tracking for Effective Regulation (DARTER)

Background and System Description

Section 404 requires a permit from the U.S. Army Corps of Engineers or EPA-approved State for the discharge of dredged or fill material into waters of the United States. EPA plays several roles in the Section 404 permit program including developing and interpreting policy, guidance and environmental criteria used in evaluating permit applications, determining the scope of geographic jurisdiction and reviewing and commenting on proposed Section 404 permits. Section 404 requires a permit from the U.S. Army Corps of Engineers or EPA-approved State for the discharge of dredged or fill material into waters of the United States. EPA plays several roles in the Section 404 permit program including developing and interpreting policy, guidance and environmental criteria used in evaluating permit applications, determining the scope of geographic jurisdiction, and reviewing and commenting on proposed Section 404 permits.

Laws, Regulations, or other business case it supports

- Clean Water Act Section 404 program implementation
- Informal Program Activity Measure

(formerly WT-3) Percent of Clean Water Act Section 404 standard permits, upon which EPA coordinated with the permitting authority (i.e., Corps or State), where a final permit decision in FY XX documents requirements for greater environmental protection than originally proposed.

Type: Indicator measure

Definition: Data for reporting under this measure will be gathered from EPA's DARTER database. For purposes of this measure, requirements for "greater environmental protection" are counted under this measure when EPA can document that its recommendations for improvement provided in one or more of the following issue areas were incorporated into the final permit decision:

- Demonstration of adequate impact avoidance, including:
    - Determination of water dependency
    - Characterization of basic project purpose
    - Determination of range of practicable alternatives
    - Evaluation of direct, secondary and cumulative impacts for practicable alternatives
    - Identification of LEDPA
    - Compliance with WQS, MPRSA, ESA and/or toxic effluent standards
- Evaluation of potential for significant degradation

- Demonstration of adequate impact minimization
- Determination of adequate compensation

Technologies

DARTER provides EPA's official agency record of the following actions and allows the program to track and report on these actions:

- Access shared data from the U.S. Army Corps of Engineers' (the Corps) national regulatory program data management system known as OMBIL Regulatory Module (ORM2)
- Access shared data from the Corps' Regulatory In-Lieu Fee & Bank Information Tracking System (RIBITS)
- Project Review:
    - Track and maintain records of agency involvement in pre-application coordination
    - Track and maintain records of agency involvement in review of public notices for proposed permits, third party mitigation projects, and proposed jurisdictional determinations
    - Track and maintain records of agency review of final permit decisions and third-party mitigation projects to determine the impact of EPA's engagement (for those on which EPA has engaged)
    - Prepare and share EPA-generated jurisdictional determinations
    - Store records related to 404 project reviews
    - Track trends in project review over time
    - Provide for continuity of awareness based on project history and location

DARTER pulls information into the database daily from a .dmp.gz file showing changes in their database from the last seven days saved by the US Army Corps of Engineers to EPA GoAnywhere web client.

DARTER pushes out the baseline data used to populate https://watersgeo.epa.gov/cwa/CWA-JDs/.

DARTER is a Java web application deployed on Oracle Fusion Middleware with data stored in Oracle Spatial Database, both running on Linux operating systems. Production and staging/testing environments are hosted within EPA NCC infrastructure.

Types of Users

EPA staff, administrative support and first line managers.

Primarily staff in the 404 regulatory programs across HQ and the Regions. Additional staff from programs with overlapping authorities, primarily NEPA and Enforcement, also use the system. In total approximately 150 accounts with approximately 70 active users.

System Access

Access is through EPA single sign on. All servers are behind the EPA NCC firewall. Direct access to the application server and database are provided by NCC staff.

Help Desk Support

User help support is via email or phone call to the EPA project lead. Project lead reaches out to contractor for additional help as needed via email.

Sanitary Survey App and National Listing of Fish Advisories

Background and System Description

Identification of potential sources of pollution is a basic tool for improving protection of public health at beaches and other waterbodies. A sanitary survey provides the connection between observed instances of elevated indicator bacteria in the water and sources of pollution in the immediate vicinity and in contributing watersheds. Identification of sources enables managers and local officials responsible for water quality to prioritize and remove or mitigate pollution sources to improve water quality.

EPA developed paper-based sanitary surveys for marine and fresh waters and has developed an alpha version of an app for the surveys. Each water type (marine and freshwater) has two surveys: annual (performed once a year) and routine (performed whenever water quality samples are taken). The app uses ArcGIS Survey 123 to provide the surveys, and the data collected by the surveys is stored on ESRI Geoplatform.

Laws, Regulations, or other business case it supports

The Beaches Environmental Assessment and Coastal Health (BEACH) Act, which amended the Clean Water Act (CWA) in 2000, was designed to address human health risks associated with water quality and swimming or similar water contact activities in coastal recreational waters. The presence of pathogens associated with fecal material at our nation's beaches is a public health concern. Beach waters can be contaminated with pathogens that cause a variety of illnesses, including diarrhea as well as respiratory, ear, eye, and skin infections. The sanitary survey app helps uncover potential sources of those pathogens so states, territories, and tribes can eliminate or reduce the source and improve the water quality.

Technologies

The sanitary survey app uses the following primary components:

- ESRI ArcMap (the EPA GeoPlatform)
- ESRI Survey123

Types of Users

- Managers and staff of state, territorial, and tribal beach programs – these can be departments of health, natural resources, environmental conservation, environmental management, environmental protection, environmental quality, etc.
- Managers and staff of state, territorial, and tribal water quality programs
- Local beach programs
- Non-profit and non-governmental organizations like Riverkeepers or Surfrider
- Citizen science / volunteer monitoring groups

Users will range from those who have had extensive experience with the paper forms of the surveys to users new to monitoring.

System Access

Users access Survey 123 via smartphone, tablet or desktop. Login is required; first to EPA's Geoplatform at https://epa.maps.arcgis.com, then via an ArcGIS login.

Help Desk Support

The contractor is not expected to provide direct user support outside of updates to the users guide when changes are made and answering questions from the EPA POC as needed.

WIFIA Vault

Background and System Description

The Water Infrastructure Finance and Innovation Act of 2014 (WIFIA) established a federal credit program administered by EPA. WIFIA authorizes EPA to provide loans to eligible water infrastructure projects. A Salesforce solution (the WIFIA Vault) was developed and implemented in early 2021 to manage the portfolio management work on the program. With the success of the portfolio management module, the WIFIA program is looking to develop a complete loan life Salesforce solution. Work under this project would include:

- Continuing to maintain and improve the existing portfolio management work, including potential integration with EPA's COMPASS system
- Creating a borrower community portal for prospective and existing borrowers to work with EPA directly through the Vault
- Developing a Letter of Interest module for prospective borrowers to apply directly through the Vault and for WIFIA staff to review those submissions
- Developing a Loan Application model for prospective borrowers to submit their application directly through the vault and for WIFIA staff to document review and decisions around the application

OWOW Finance Central

Background and System Description

The Office of Wetlands, Oceans and Watersheds (OWOW) Finance Central is a Salesforce application that allows offices to develop budgets and track expenditures project-by-project. OWOW's Planning, Communications, and Resources Management Services (PCRMS) are responsible for managing the budget and expenditures for ten branch-level organizations across three division-level organizations each fiscal year. The OWOW Finance Central platform will allow project-by-project tracking of OWOW's annual operating plan budget discussions.

Response on the Go

Background and System Description

The Response on the Go mobile app is a one-stop-shop for the most important information needed for water utility personnel responding to a water-related incident, allowing users to track severe weather, contact response partners, review checklists of incident activities, record damage, fill in Incident Command System (ICS) forms, and access additional emergency planning information.

This app provides tools to the water sector for improving resiliency and response capabilities. The mobile app is innovative in that there is no other product available that serves this purpose, and practical in that it harnesses mobile technology to provide a wealth of information very conveniently. This mission fits into the Agency's larger mission of protecting human health and the environment.

Appendix A.3 – Monthly Report Content

The contractor must deliver a monthly report by the 5th day of each Calendar month for the previous month's Project Activities. A consolidated monthly report must be provided and must be transmitted to the CO, COR, and each EPA Project Manager. The contractor must provide a template for the report based on the following content within 5 business days of contract award.

1. The total funding for the project, estimated remaining balance, and estimated incurred costs for the previous month. The values can be estimates as the invoice will follow later, which will have accurate costs.
2. A list of activities, deliverables and other work completed by Task or Sub-Task in summary form.
3. A list of issues and risks and any ongoing mitigation or corrective actions.

Appendix A.4 – Monthly Financial Tracking

Each month at the same time as the monthly reports the contractor must enter into a SharePoint list or another mutually agreed format costs for each project under the contract along with costs for ODCs and any fees.

The contractor must also provide an aggregated view of total spending and amount remaining for each project in Excel or another mutually agreed format.

Executive Order Compliance Review

The following review verification document must be included with any assistance agreement, contract or interagency (IA) funding action or amendment to a workplan or statement of work. The document demonstrates that the signatory understands that the action and associated workplan or performance work statement complies with Executive Order requirements (detailed here: Presidential Actions – The White House) at the time of signature.

For actions requiring this document, signature must be by the Office Director (OD) in Headquarters or the Division Director (DD) in the regions. An OD/DD may assign a designee. Contracting Officers/ Specialists, IA Specialists, and Grants Specialists must retain the signed document in the contract, IA or grant file.

Funding actions for $50,000 and above, review and signature by a DOGE team member is required.

Funding Action Review Confirmation

This confirms that the workplan, budget or performance work statement does not conflict with the Executive Orders and aligns with the Administrator's "Powering the Great American Comeback" initiative. Funding organizations may batch actions and attach a list of covered actions, which must include the following details, at a minimum.

Contract/ Grant/ IA #: 68HE0323A0006

Recipient/ Vendor name: Environmental Resources Group

Funding amount $: $85,618.70

Work Description:

The activities/deliverables will provide support to EPA to review and assess state animal agriculture programs to identify consistency with the Clean Water Act requirements, effective implementation by state agencies, and opportunities for EPA/State coordination/collaboration. This action aligns with EPA statutory requirements under Sections 117, 122, and 123 of the Clean Water Act.

System Link: Draft Purchase Request attached

Government-wide Acquisition (if yes, check box): ☐

Workplan/PWS Attachment (follow these instructions):

- Must use Adobe Pro
- Select "All Tools"
- Select "Edit a PDF"
- Under "Add Content," select "Show More," choose "Attach a file."

Price-Fay, Michelle

Digitally signed by Price-Fay, Michelle
Date: 2025.03.20 11:21:11 -04'00'

Program Office Director (or designee)/ Regional Division Director (or designee)

DOGE Team (if required)

Request for Quote #5

BPA #: 68HE0323A0006
Call Order #: 5
Date: February 18, 2025

Call Order Title: Animal Agriculture Program Assessment Updates SOW: EPA Region 3 Water Division (WD)

This is a request for quote (RFQ) for a project plan and cost/price quote for activities outlined in the Statement of Work (SOW) for the above referenced blanket purchase agreement. The project plan and cost/price quote shall be submitted within fourteen days (14) of receipt of this RFQ. The contractor's response shall include, as appropriate the technical approach, personnel assigned, period of performance and deliverables based upon the activities outlined below in accordance with the call order procedures.

The following activities are requested in support of Task 1 as described in the SOW.

The Contractor shall provide a quote for the activities described below. Should the EPA accept the quote, a call order shall be issued, and the Contractor shall work with the Region 3 contacts to schedule and perform the activities. The selected Contractor shall take all direction under this call order from the EPA. EPA expects that activities shall be completed within 24 months of award with a start date of March 2025.

Level of Effort: This is a Firm Fixed Price Call Order.

Reference Materials the Contractor shall utilize include:

- Final West Virginia Animal Agricultural Program Assessment - available at: https://www.epa.gov/sites/default/files/2015-09/documents/westvirginiaanimalagriculturepro gramassessment.pdf
- Final New York Animal Agricultural Program Assessment - available at: https://www.epa.gov/sites/default/files/2015-07/documents/new_york_animal_agriculture_program_assessment_final_2.pdf
- West Virginia's Final Phase III Watershed Implementation Plan - available at: https://www.wvca.us/bay/files/bay_documents/1298_WV_WIP3_final_082319.pdf
- New York's Final Phase III Watershed Implementation Plan - available at: https://www.dec.ny.gov/lands/112126.html
- West Virginia's 2020-2021 and 2022-2023 Two Year Programmatic Milestones - available at: http://www.wvchesapeakebay.us/progress/
- New York's 2020-2021 and 2022-2023 Two Year Programmatic Milestones – available at: https://www.dec.ny.gov/lands/33279.html

- West Virginia's animal agriculture program – available at: https://agriculture.wv.gov/
- New York's animal agriculture program – available at: https://agriculture.ny.gov/animals

Task 1: Animal Agriculture Program Assessment Updates

The contractor shall provide support to EPA to update the 2015 West Virginia and New York Animal Agriculture programs assessments in the Chesapeake Bay watershed. The assessments address whether the state programs are consistent with Clean Water Act requirements and are implemented effectively to achieve the state's animal agriculture Watershed Implementation Plan (WIP) commitments to reduce nitrogen, phosphorus, and sediment under the Chesapeake Bay Total Maximum Daily Load (TMDL). Programs assessed are regulatory and voluntary programs pertaining to concentrated animal feeding operations (CAFOs) and animal feeding operations (AFOs) and their associated cropland.

The goal of this effort is to: 1) document any changes to the State programs since the previous assessments were completed and evaluate and determine the status of the recommendations, 2) evaluate whether the state programs are consistent with federal regulations and with the states' animal agriculture WIP commitments under the Chesapeake Bay TMDL, 3) determine whether the programs are being effectively implemented, 4) make any program recommendations that would maximize nutrient and sediment reductions to meet Load Allocation and Waste Load allocations of the Chesapeake Bay TMDL and any local water quality efforts that shall have benefits to nutrient reductions. Activities shall include collecting information on the state animal agriculture programs and WIP commitments and determining the extent to which animal agriculture operations are subject to and complying with nutrient management planning requirements, National Pollutant Discharge Elimination System (NPDES) permitting requirements, or other state requirements. The contractor shall help EPA collect information sufficient to support analysis of the strengths and weaknesses of state CAFO programs and other animal agriculture programs in the Chesapeake Bay watershed.

SPECIFIC TASK ACTIVITIES/DELIVERABLE DEADLINES:

- **State Assessments:** Conduct a review and evaluation of the state animal agriculture regulatory and voluntary programs in the Chesapeake Bay watershed portion of the two (2) states identified above, including programs that address CAFOs and AFOs and their associated cropland, to identify whether such programs are consistent with Clean Water Act requirements and are implemented effectively to achieve the state's animal-agriculture WIP commitments.

- **State-Specific Questionnaire:** Contractor shall work with R3 to revise and update state-specific questionnaires relating to animal agriculture programs and WIP commitments.

- **Follow-up Interviews:** Contractor shall work with R3 to prepare for and conduct follow-up interviews with the States, as needed and directed by EPA.

- **File Reviews:** Contractor shall conduct file reviews as directed by R3, where appropriate and as necessary.

- **Web Searches:** Contractor shall conduct web searches on state program implementation and review annual or updated progress available and presented since 2015.

- **Public Access Review:** Contractor shall conduct reviews of public availability of permit and program information to evaluate regional consistency and access to information highlighting best practices.

- **Written Products**: Contractor shall provide draft and final versions of completed state assessments to R3 and R2, as appropriate. Draft reports for WV and NY shall be submitted to EPA within 180 days following the start of each review unless otherwise directed by EPA. It is expected that the reports shall roughly follow the template of the Pennsylvania, Virginia, and Maryland reports and any changes shall not be made to the report structure unless directed by EPA. EPA shall provide comments and edits on the documents to the contractor or may make changes directly depending on the type and extent of comments.

Contractors shall work with R3 project lead to begin drafting state-specific questionnaires for WV and NY. Region 3 shall coordinate with Region 2 for NY activities. Information on the state program assessments can be found at: https://www.epa.gov/chesapeake-bay-tmdl/epas-assessments-animal-agriculture-programs-chesapeake-bay-watershed

Communication

Anticipate a minimum of five (5) and a maximum of twenty (20) project planning conference calls or virtual meetings with contractors and EPA to discuss this project. The contractor shall develop notes from those conference calls/meetings to document the discussion, actions items and decisions points. EPA POCs are also available on an as needed basis for clarification and informal discussions.

Deliverables

1. Questionnaire
2. Summary notes from follow-up interviews, file reviews, reviews of public availability of permit and program information, and web searches

3. Draft and final versions of updated assessments

The Project Officer/Contracting Officer's Representative for this Call Order is Lydia Bailey (215-814-5437), bailey.lydia@epa.gov. The Region 3 contacts for this activity include Leah Martino (215-814-3262) martino.leah@epa.gov; Rebecca Crane (215-814-2389) crane.rebecca@epa.gov; Carissa Moncavage (215-814-5798) moncavage.carissa@epa.gov; Jessica Martinsen (215-814-5144) martinsen.jessica@epa.gov; and Jennifer Fulton (304-234-0248) fulton.jennifer@epa.gov.

RFQ Submittal:

Project Plan

The contractor's response shall include, as appropriate the technical approach, personnel assigned, and deliverables based upon the activities outlined in accordance with the call order procedures. The contractor shall describe their staffing plan for this requirement, including all proposed labor categories. Offerors are cautioned that, if awarded a call order, their staffing plan shall be used to set the minimum standard for acceptable staffing under this order. Any replacement personnel provided after award shall be at least as qualified as the individuals included within the offeror's staffing plan.

The contractor's response shall state compliance or exception to call order requirements, risks, assumptions, and conflict of interest issues. Plans shall not merely restate the statement of work requirements.

Price/Cost Quote

The price/cost quote shall include detailed cost/price amounts for all resources required to accomplish work under the call order (e.g., labor hours, other direct costs, or travel) for each call, and an overall total price. At a minimum, the following data shall be provided:

(a) Appropriate labor categories and associated number of hours, identification of clerical labor, other direct costs elements, and any GFP, GPE, or GFI required,

(b) Any other relevant information requested.

(c) Any assumptions.

Offerors are requested to submit the quote separately from their staffing plan.